

- USSR

PROKOSHIN, D. A., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 4, 1973, pp 138-143

NVLOTZTs is harder than the alloy with additional carbon, with the difference in hardness remaining almost constant throughout the range of annealing temperatures. Conversely, alloy NVLOTZTsU has a higher hardness than NVLOTZTs when the alloys were quenched from 1600°C and aged at 1100°C for 0 to 300 hours with the difference in hardness increasing between the alloys with increased aging time at 1100°C. The best combination of mechanical properties at room temperature for the two alloys was produced for a heat treating mode of quenching from 1600°C + aging at 1100°C for 150 hours with tensile strength, yield strength, elongations and hardness values of 72.8 kg/mm², 66.5 kg/mm², 20%, 230 kg/mm² and 90.0 kg/mm², 67.3 kg/mm², 15%, 285 kg/mm², respectively for NVLOTZTs and NVLOTZTsU. The long-time strength of alloy NVLOTZTs was 28 kg/mm² when quenched from 1600°C which is equal to the American alloy F-48, although the American alloy contains a much larger quantity of tungsten (15%). Thus, heat treatment of the alloys by quenching to the supersaturated solid solution for the given conditions assures additional strengthening of the alloys and is especially effective for the alloy with additional carbon content. For conditions of long-time stress at 1100°C, precipitation of a finely dispersed

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PROKOSHIN, D. A., et al., Izvestiya Vysshikh Uchebnykh Zavudeny--Chernaya Metallurgiya, No 4, 1973, pp 138-143

strengthening carbide phase occurs from the multicomponent solid solution and prevents the occurrence of shear and diffusion processes. Retarding of the diffusion process of dislocation creep by hard refractory particles of the precipitations leads to increased high-temperature creep strength. 3 figures, 4 tables, 8 bibliographic references.

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USSR

UDC 669.293.5

PROKOSHIN, D. A., VASIL'YEVA, YE. V., and MARKOVA, S. A., Moscow

"Influence of Alloying With Small Quantities of Titanium and Zirconium on the Properties of Niobium"

Moscow, IAN SSSR, Metally, No 2, Mar-Apr 71, pp 130-135

Abstract: Results are presented from an investigation of the influence of elements of group IVA -- titanium and zirconium -- on the structure, hardness, mechanical properties, and creep of niobium. Both components differ from niobium in a number of physical and chemical characteristics, which influences the interatomic bond, fine structure, and rupture mechanism of the metal. Studies were performed for niobium alloys containing from 1 to 6 at. % Ti and from 0.5 to 5 at. % Zr after extrusion and after annealing. The microstructure, hardness, and mechanical properties of the alloys were studied at room temperature, and the creep was studied by extension at 1100°C at stresses of from 8 to 20 kg/mm². The alloying elements are distributed differently in the structure of the niobium. The zirconium is distributed unevenly, with primary concentration on the grain boundaries, while

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PROKOSHIN, D. A., et al., IAN SSSR, Metally. No 2, Mar-Apr 71, pp 130-135

the titanium is distributed evenly through the grains. A significant increase in hardness and mechanical characteristics is produced at room temperature by alloying with titanium and zirconium. Alloying with small quantities of titanium and zirconium also increases the creep resistance significantly. As the content of alloying elements is increased to 5-6 at. %, the mechanisms increasing hardness are covered by the transition to the state of a normal solid solution.

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USSR

UDC: 621.373:530.145.6

ANOKHIN, A. V., MARKOVA, S. V., PETRASH, G. G.

"Pulse Emission on Vibrational Transitions of CO During Cooling of the Gas"

Kratk. soobshch. po fiz. (Brief Reports on Physics), 1970, No 8, pp 15-21
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D215)

Translation: To study emission on vibrational transitions in CO in the pulse mode, the gas was cooled by using cold nitrogen. Pulse emission was studied in a CO discharge and CO-He, CO-N₂ and CO-N₂-He mixtures. Emission on a Co-He mixture was studied in greatest detail. Emission in the CO discharge had considerably less power and a completely specific nature as compared with emission in the mixtures. It is shown that the presence of He considerably improves emission on CO transitions. The most characteristic feature of emission on CO-He is the abrupt increase in emission power in the afterglow. It is assumed that the formation of an inversion on CO transitions can be explained by a relaxation mechanism with respect to the vibrational levels of an anharmonic oscillator. A. K.

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USSR

UDC 621.382.002

VERNIKOV, M.A., VOROB'YEV, N.N., MARKOVA, T.A., ROSINA, L.A., SHCHEGLOV, A.S.

"Study Of The Effect Of Thermocompression Regimes On The Electrical Parameters Of Transistors"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 161-166 (from RZh: Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B526)

Translation: The study was conducted on planar silicon n-p-n transistors with an epitaxial base. The thermocompression regime was controlled by two parameters --the temperature and pressure at the wedge [jgla], which were varied in the limits $320\text{--}390^\circ\text{C}$ and $25\text{--}31.3\text{ kg/mm}^2$, respectively. It is shown that an increase of the temperature and pressure at the wedge leads to a significant instability of the parameter h_{FE} in the course of 500-hour tests on reliability. The mechanism of the effect of remanent strains on the instability of h_{FE} is discussed. It is proposed first to set the temperature and pressure at the minimum level which assures a sufficient mechanical stability, and secondly to maintain the regime with a precision not worse than 5 percent. 4 ill. 17 ref. G.I.

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MARKOVA, T.I.

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6-7-74

XIV-7. EFFECT OF SUBSTITUTED IONICITY ON THE STRUCTURE OF EPITAXIAL LAYERS OF GALLIUM ARSENIDE OBTAINED BY VARIOUS METHODS

Article by I. I. Markova, Yu. N. Kuznetsov, P. R. Khramov; approved, III
 discussion no previous time I spoke Polymerscience Institute I think
 (Kashan, 12-13 June 1972 p. 197)

In methods of optical, interfered and electron microscopy were used to study the interrelation of the defects in the monocrystalline and the polycrystalline layers of gallium arsenide obtained by the methods of epitaxy and liquid epitaxy. Defects (inclusions, chips and dislocations) with density greater than 10^{-4} cm⁻² were introduced into the initial substrates intentionally, and the effect of the defects introduced into the substrates on the structural perfection of the epitaxial layers was traced. It was demonstrated that in the epitaxial layers obtained by the method of chloroide epitaxy, high density of the growth defects was detected [10⁻³ cm⁻²] and high density of the packing defects was obtained [10⁻³ cm⁻²]. In individual sections the defect density was so high that the epitaxial layer became polycrystalline. The method of transmission electron microscopy was used to determine the type of packing defects, and it was demonstrated that the "substructure packing defects" are observed.

In the epitaxial layers obtained by liquid epitaxy, microcracks were observed [thinner than 10 microns] which apparently are regions absorbed by falling. In thicker structures no increased defect density caused by the introduced defects in the substrate are observed. The absence of defects probably arises from the fact that at the solidus point in epitaxial growth, solution of the substrate material by the liquid falling takes place to a depth exceeding the depth of the dissolved layer.

Under anisotropic conditions, the growth of entangled fibers was carried out on the surface of a substrate with which the chemical potentials did not remove the defects caused by machining. In this case, in the layers obtained by this method, no increased growth defect density or packing density was observed. In the structures obtained by the method of liquid epitaxy, the regions enriched in palladium are retained.

Water Treatment

USSR

UDC: 541.183.1.004.67:681.3

MARKOVA, T. S., KOZHEVNIKOV, A. V., VOL'F, I. V., KONPREV, V. A., Leningrad Technological Institute of the Paper and Pulp Industry

"Investigation of the Effect of Various Factors on the Coefficient of Utilization of the Reductive Capacity of Electron Ion Exchange Resins in the Process of Absorption of Oxygen Dissolved in Water"

Leningrad, Zhurnal Prikladnoy Khimii, Vol. 45, No 5, May 72, pp 1046-1049

Abstract: Studies were done on optimizing the process of deoxygenating water by electron ion-exchange resins. Experimental data were analyzed to determine the relationship between the coefficient of utilization of the reductive capacity of KU-11 cation-exchange resin and a combination of six independent factors: X_1 -- grain size, X_2 -- temperature, X_3 -- oxygen concentration in the water, X_4 -- concentration of copper in the ion-exchange resin, X_5 -- rate of filtration and X_6 -- height of the filtering layer. The analysis showed that grain size could be disregarded. Calculations on the "Minsk-22" computer gave a linear regression equation after elimination of X_1 . The relative influence of different factors on the dependent variable Y_0 was accounted for by introducing coefficients of elasticity, where a_i is the regression coefficient of the i -th factor, \bar{X}_i is the average value of the i -th factor, and \bar{Y} is the average value of the dependent variable.

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USSR

UDC 616-008.922.1.04-092:616.45

MARKOVA, Ye. A., Department of Pathological Physiology (Chief, Prof. E. N. Berger), Ternopol' Medical Institute

"The Mechanism of the Effect of the Adrenal Glands on Resistance of the Organism to Hypoxia"

Moscow, Patologicheskaya Fiziologicheskaya i Eksperimental'naya Terapiya, No 4, Jul-Aug 73, pp 62-63

Abstract: A series of experiments on 103 mice was conducted in order to ascertain which hormones of the adrenal cortex are necessary for manifestation of the action of cholinergic substances on resistance of the heart to an acute lack of oxygen. Four series were conducted: a) control (37 mice); b) adrenalectomy, performed two days before the experiment (25 mice); c) adrenalectomy with the subsequent administration of DOCA (19 mice); d) adrenalectomy with the subsequent administration of hydrocortisone (21 mice). Adrenalectomy diminished the resistance of the heart and eliminated the prolonging action of carbocholine on the time of preservation of cardiac biocurrents in mice with acute hypoxia. Administration of hydrocortisone to adrenalectomized animals increased the resistance of the heart to hypoxia, 1/2

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MARKOVA, Ye. A., Patologicheskaya Fiziologicheskaya i Eksperimental'naya Terapiya, No 4, Jul-Aug 73, pp 62-63

and increased the prolonging action of carbocholine on the time of preservation of biocurrents in the heart. Administration of DOCA to adrenalectomized mice failed to influence the resistance of the heart to hypoxia, nor did it influence the effect of carbocholine. 1 figure. 2 references.

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USSR

UDC: 519.2

MARKOVA, Ye. V., LISENKOV, A. N.

"Planning an Experiment Under Conditions of Nonhomogeneities"

Moscow, Planirovaniye eksperimenta v usloviyakh neodnorodnostey (cf. English above), "Nauka", 1973, 219 pp, ill. 1 r. 20 k. (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V311 K [annotation])

Translation: The paper presents one of the divisions of the theory of a multifactor experiment: methodology of planning an experiment under conditions of nonhomogeneities. A detailed description is given of methods of planning to eliminate and estimate the influence of discrete drift by using combinatorial schemes of the type of Latin and (hyper)-Graeco-Latin squares, rectangles and cubes, BIB and PBIB designs, complex asymmetric plans, and also questions of using combinatorial schemes for constructing plans of second order and a sequential screening experiment. Methods of planning under conditions of continuous drift are presented.

All the methods of planning which are examined are special procedures with limitation on randomizing conditions of doing the experiment.

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USSR

MARKOVA, Ye. V., LISENKOV, A. N., Planirovaniye eksperimenta v usloviyakh neodnorodnostey, "Nauka", 1973, 219 pp

The presentation is formulary in nature and is illustrated by numerous examples reduced to calculations. The book is of interest to specialists of many branches of science -- chemists, physicists, biologists, specialists in automation -- all who are involved with the design of experiments.

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USSR

MARKOVA, Ye. V., KOZYREV, V. P.

"Combinatorial Systems and Graph Theory"

Vopr. Kibernetiki. Nekotor. Vopr. Planir. Eksperimenta [Problems of Cybernetics. Some Problems of Experimental Planning -- Collection of Works], Moscow, 1972, pp 3-12 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V353, by I. Sigal).

Translation: Problems of experimental planning are studied from the standpoint of combinatorial analysis. Experiments can be ordered according to various factors on the basis of combinatorial systems. The class of combinatorial systems used in this case is indicated. It is noted that the external factors may have a simple and hierarchical structure. A definition of planning of experiments using the concepts of block diagrams is presented, and the properties of the block diagrams are studied. Examples are given of decision making concerning the selection of an experimental plan as a function of an external factor.

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USSR

MARKOVA, Ye. V., CHEMLEVA, T. A.

"The Composition Principle of Investigation of Multicomponent Mixtures"

Voprosy Kibernetiki. Nekotoryye Voprosy Planirovaniya Eksperimenta [Problems of Cybernetics. Certain Problems of Experimental Planning], Moscow, 1972, pp 73-86 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V294, by the authors).

Translation: When composition-property diagrams are studied, it is necessary to develop sequential experimentation plans. The sequence of plans should be constructed so that all or part of the experiments of the initial plans are included in subsequent plans, i.e., planning should include the composition principle. This article presents a classification of typical situations arising in planning in diagrams with qualitative factors which are useful for the development of the composition principle of planning.

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USSR

KARACHENETS, D. V., MASSAL'SKIY, G. E., ANDREYEV, N. V.

"A Mass Exchange Process as a Controlled Random Process"

Upravlyayemye Sluchayn. Protsessy i Sistemy [Controlled Random Processes and Systems -- Collection of Works], Kiev, 1973, pp 158-175 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973; Abstract No 6V210).

Translation: The theory of optimal control of random processes is applied to problems related to mass transfer processes, examples of which include fractional distillation, absorption and extraction.

the thigh muscle of -
animals developed lethal pathological phenomena.
animals with intact adrenal glands. Rats injected with ACTH retained
pO₂ in muscles during extended hypoxia, and terminal phenomena developed much
later than in controls. Under the influence of ACTH, an adaptive mechanism
apparently developed which increased the oxygen supply during hypoxia to a
level capable of supporting life processes for a prolonged period of time.

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USSR

UDC 616-008.922.1.04-092:616.45

MARKOVA, Ye. A. Chair of Pathological Physiology, Ternopol' Medical Institute
"Significance of the Adrenal Glands in Shifts in Oxygen Pressure in the Tissues
During Hypoxia"

Moscow, Problemy Endokrinologii, Vol 16, No 5, Sep/Oct 70, pp 72-75

Cats and albino rats with disturbed adrenal function were studied
in shifts of oxygen pressure (pO_2) in the
polarographically on

USSR.

UDC 678.742.66.081
AKHMEZADE, D. A., MARKOVA, YE. I., IBRAGIMOVA, D. S., and
DZHANIBEKOV, N. F., INKHP, Academy of Sciences Azerbaydzhan SSR

"Stabilization of Polypropylene by Certain Salts of O,O-Diphenyl-
dithiophosphoric Acid"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 4, 1972, pp 98-101

Abstract: Ni, Co, Cd, Ba, Ca, and Mg salts of O,O-diphenyldithio-
phosphoric acid were studied for their stabilizing effects on poly-
propylene (brand 0.5P10/20). The salts were added to powder
preparations of polypropylene to final concentrations of 0.5, 1.0,
or 3.0 wt%, which were then subjected to 200 atm at 200°C to form
0.2-0.4 mm thick plates. The effects of heat, aging, and light
on these plates were then evaluated in terms of physicochemical
and rheological indexes, as well as on the basis of oxidation
induction periods. The results confirmed previous studies that
Ni, Co, and Cd salts were most effective in this respect, and
that the optimal concentrations ranged from 0.5-1.0 wt%. Although
even greater effectiveness was obtained with certain salts at a
concentration of 3.0 wt%, the use of such high concentrations is
contraindicated.

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1/2 013
UNCLASSIFIED
TITLE--MATHEMATICAL STATISTICAL OPTIMIZATION OF THE PROCESS FOR PREPARING
DRUGS. II. OPTIMIZATION OF A PROCESS FOR PREPARING NEVOCAINE -U-
AUTHOR--(03)-SEKOVA, N.A., VESLER, N.A., MARKOVA, YE.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM.-FARM. ZH. 1970, 4(3), 35-7
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ANALGESIC DRUG, DRUG INDUSTRY, CHEMICAL SYNTHESIS, MATHEMATIC
ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAKE--3004/0555

STEP NO--UR/0450/70/004/003/0035/0037

EXCEPTION NO--AP0131178

UNCLASSIFIED

PROCESSING DATE--11NOV70

2/2 013
CIRC ACCESSION NO--AP0131178
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NOVOCAINE BASE (I) WAS PREPD. BY REACTION OF P-H SUB2 NC SUB6 H SUB4 CO SUB2 NA (II) WITH CLICH SUB2) SUB2 NET SUB2 (III). THE BASE WAS CONVERTED TO 1.HCL AND WEIGHED. YIELDS WERE BASED ON II AND FACTORS STUDIED WERE DURATION OF REACTION (X SUB1), TEMP. (X SUB2), EXCESS OF II (X SUB3), AND CONC. (X SUB4) OF II IN WT. PERCENT; 16 EXPTS. WERE MADE IN RANDOM ORDER AND RESULTS PUT IN MATRIX FORM, $Y \text{ EQUALS } B \text{ SUB0 PLUS } B \text{ SUB1 X SUB1 PLUS } B \text{ SUB2 X SUB2 PLUS } B \text{ SUB3 X SUB3 PLUS } B \text{ SUB4 X SUB4}$. BASE LEVEL $X \text{ SUB1 EQUALS } 60$, $X \text{ SUB2 EQUALS } 60$, $X \text{ SUB3 EQUALS } 4$, $X \text{ SUB4 EQUALS } 0.5$ AND INTERVAL OF VARIATION (EPSILON SUBJ), $X \text{ SUB1 EQUALS } 15$, $X \text{ SUB2 EQUALS } 10$, $X \text{ SUB3 EQUALS } 4$, $X \text{ SUB4 EQUALS } 3$, WERE CHOSEN FROM PRELIMINARY EXPTS. AND RESULTS GIVEN IN THE LITERATURE. WITH THESE VALUES, THE CALCD. COEFFS. OF REGRESSION ARE $B \text{ SUB0 EQUALS } 60.85$, $B \text{ SUB1 EQUALS } 0.62$, $B \text{ SUB2 EQUALS } 0.72$, $B \text{ SUB3 EQUALS } 1.36$, $B \text{ SUB4 EQUALS MINUS } 2.99$. STATISTICAL ANAL. OF EXPTL. RESULTS SHOWED AN AV. QUADRATIC ERROR OF ONLY 1.71PERCENT. GOOD YIELDS OF I DEPEND MAINLY ON A DECREASE IN CONC. OF II AND AN INCREASE OF ITS EXCESS DURING REACTION. TEMP. HAD LITTLE INFLUENCE BUT COULD BE RAISED. LOWEST YIELD OF I WAS 52.7PERCENT, HIGHEST 71.5, LITERATURE 38. A YIELD UP TO 77.3PERCENT WAS ATTAINED DURING 3 ADDNL. EXPTS. FOR TEST OF ADEQUACY OF THE LINEAR MODEL BY THE STEEP ASCENT METHOD. FACILITY: VSES. NAUCH.-ISSLED. KHIM.-FARM. INST. IN. DRDZHONIKIDZE, MOSCOW, USSR.

1/2 013 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--USE OF MATHEMATICAL STATISTICAL METHODS TO OPTIMIZE THE PREPARATION
OF TECHNICAL METHOXYCARBONYLSULFONYLGUANIDINE AT THE ISOMERIZATION
AUTHOR--(03)-VFKSLER, N.A., ZASOSOV, V.A., MARKOVA, YE.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM.-FARM. ZH. 1970, 4(2), 33-6
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
TOPIC TAGS--ISOMERIZATION, METHOXY COMPOUND, THIOL, STATISTICAL ANALYSIS,
ORGANIC SALT, AMMONIA, CHEMICAL REACTION RATE, GUANIDINE, CYANAMIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/0536
STEP NO--UR/0450/70/004/002/0033/0030
CIRC ACCESSION NO--AP0113427
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--02OCT70

2/2 013

CIRC ACCESSION NO--AP0113427

ABSTRACT/EXTRACT--(U) GP-U- ABSTRACT. TWO SERIES OF EXPTS. WERE RUN, INVOLVING 10 AND 14 TESTS, ON ISOMERIZATION OF THE NH SUB4 SALT OF METHOXYCARBONYLSULFONYLCYANAMIDE (I) TO METHOXYCARBONYLSULFONYLGUANIDINE (II). WITHOUT A SOLVENT THE OPTIMUM YIELD (92.3PERCENT) OF II WAS OBTAINED BY MAINTAINING I AT 182DEGREES FOR 378.0 MIN WITH STIRRING. FACTORS AFFECTING THE YIELD OF II IN THE PRESENCE OF ETHYLENE GLYCOL (III) AS SOLVENT WERE REACTION TEMP., TIME, AND THE I:III RATIO. THE MAX. YIELD (72.5PERCENT) WAS OBTAINED AT THE I:III RATIO OF 0.85 REACTION TEMP. FOR 160DEGREES, AND REACTION TIME 100 MIN. THE OPTIMUM CONDITIONS FOR BOTH REACTIONS WERE DETERMINED BY EMPLOYING THE BOX AND WILSON METHOD OF EXPT. PLANNING. A STATISTICAL ANAL. OF THE RESULTS IS REPORTED.

UNCLASSIFIED

Recorders and Transducers

UDC 621.397.621

USSR

BEL'SKIY, V. N., DAVIDENKO, S. N., ~~MARKOVA, Yu. V.~~ PILATOVSKIY,
A. I., SMIRNOV, A. Ye., and UAKIN, Ye. S.

"Mobile Magnetic Video Recording Station PVS-1"

Moscow, Tekhnika kino i televideniya, No. 6, 1971, pp 33-37

Abstract: The advantage of this mobile video recording station is that it enables personnel involved in TV programming not only to escape the confines of the studio but to transcend the line-of-sight limitations of the portable transmitter. The station was built by order of the State Committee of the Council of Ministers, USSR, for Television and Radio, in the VNIITR /expansion unknown/ and was completed in 1970. Short descriptions are given of the equipment complement, the functional system of the station, the video channel, the sound accompaniment, the recording of directors' comments, and other facilities the station affords. Diagrams are given of the equipment layout in this mobile recording studio, and of interconnections of the system blocks. Photographs of some of the equipment are also shown.

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172 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--HYDROXYLAMINE DERIVATIVES. III. SYNTHESIS AND SOME REACTIONS OF
HYDROXYLAMINO DERIVATIVES OF 2-METHYL-BENZIMIDAZOLE -U-
AUTHOR--(04)-BARKOVA, YU.V., OSTROUNOVA, N.G., LEBEDEVA, V.I., SHCHUKINA,
M.N.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SUEVIN. 1970, (3), 415-18
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROXYLAMINE, BENZINE DERIVATIVE, ORGANIC AZOLE COMPOUND,
CHEMICAL SYNTHESIS, MOLECULAR STRUCTURE, NUCLEAR MAGNETIC RESONANCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0631 STEP NO--UR/0409/70/000/003/0415/0418
CIRC ACCESSION NO--AP0128169
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123169

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SHOWN ON MICROFICHE.

FACILITY: VSES. NAUCH.-ISSLED. KHIM.-FARM. INST. IM. GORDZHONIKIDZE,
MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 539.5

PRONIN, A. T., VOROB'EV, N. A., and MARKOVETS, M. P., Moscow

"Influence of Structure of VT3-1 and VT-18 Alloys on Fatigue Resistance With Asymmetrical Loading Cycle"

Kiev, Problemy Prochnosti, No 4, Apr 72, pp 105-107.

Abstract: Results are presented from fatigue testing of titanium alloys at normal and elevated temperatures with asymmetrical and symmetrical loading. The influence of structure produced by various rolling technologies of bars on cyclical strength of the alloys is determined. This influence differs, depending on the loading conditions. When loading is performed with a pulsating cycle (extension $R=0$) at room temperature, bars of VT3-1 and VT-18 Alloys with fine-grained equiaxial structure have greater cyclical strength than metals with plate structure. At 450°C with asymmetrical extension with mean stress $\sigma_m=30 \text{ kg/mm}^2$, the fine-grained equiaxial and plate structures are equal: for VT-18 alloy, the plate structure provides a higher resistance to fatigue rupture at 600°C and $\sigma_m=25.0 \text{ kg/mm}^2$.

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Metrology, Surveying, Mapping, Graphics

USSR

UDC: 620.172.23

MARKOVETS, M. P. . IZMAYLOV, F. I.

"A New Method for Determining Necking Down of Metallic Materials"

Moscow, Zavodskaya Laboratoriya, No. 9, 1971, pp 1135-1138

Abstract: A method is described for determining the transverse reduction in area of metallic materials during sclerometric hardness tests, and a sequence is suggested for calculation of the values of ψ . It is demonstrated that there is a stable relationship between the values of ψ determined by the method suggested and by the method of extension for different types of steel.

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UNCLASSIFIED

SECTION III SO: Selected Research Facilities

Name: Institute of Biophysics, Pushchino

Description:

(U) During this quarterly reporting period, 25 new articles were identified from the Institute of Biophysics, Pushchino. On the basis of these articles, it was possible to identify 32 new personalities with the Institute. These personalities, the subjects of the articles, and the dates are given below:

below:

All biophysics/physiology

Alymova, E. A.	phosphorylation	1971 (34)
Apkayeva, G. F.	radiation effect	1970 (35)
Arpova, D. F.	radiation effect	1971 (36)
Azhapa, Ya. I.	hypoxia	1969 (37)
Bregadze, I. V.	radiation effect	1970 (38)
Buecl, Te. P.	luminescence	1970 (39)
Dmitriyeva, T. L.	radiation effect	1970 (39)
El'tsyeva, V. A.	blood plasma	1969 (40)
Domareva, O. F.	radiation effect	1970 (39)
Dubrov, A. P.	biochemical analysis	1971 (41)
Gabelova, N. A.	muscle physiology	1971 (42)
Ganush, Ye. E.	radiation effect	1970 (35)
Ivkova, M. N.	serum albumin	1971 (43)
Karatkin, V. S.	phosphorylation	1971 (35)
Khokhlova, G. K.	muscle physiology	1971 (44)
Kislov, A. N.	salivary gland	1970 (45)
Klyagina, V. P.	oligonucleotide	1970 (46)
Korol, B. A.	radiation effect	1971 (44)
Koshelova, G. N.	biochemical analysis	1971 (45)

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Kuzmina, S. V.	tissue culture	1970 (47)
Hackovich, D. S.	lactate dehydrogenase	1971 (48)
Hedvedeva, I. P.	radiation effect	1971 (49)
Pestkova, L. V.	phosphorylation	1971 (49)
Pronovich, L. A.	antibiotic	1970 (50)
Rodionova, M. A.	mitochondrion	1971 (51)
Shekhtekin, V. N.	phosphorylation	1971 (49)
Skobeev, Ye. M.	radiation/vibration	1970 (52)
Stokovskiy, V. D.	radiation effect	1970 (35)
Terekov, V. D.	blood plasma	1959 (40)
Ustrikhin, N. V.	lactate dehydrogenase	1971 (48)
Vilenchik, M. M.	radiation effect	1970 (53)
Zayatsin, A. A.	muscle physiology	1971 (42)

Dubrov and Kosheleva (41) are associated with the Laboratory of Cell Biophysics at the Institute. Reference 32 above is of special interest since it presents an investigation of combined stresses, i.e., radiation and vibration. In addition to the above articles, five of the twenty-five (34-38) were authored by persons already identified with the Institute of Biophysics, Pushchino. Reference 33 associates the authors of the article, L. V. Sizhenikina, V. L. M. Bushina, and A. M. Kuzin, with the Department of Radiobiology at the Institute.

UNCLASSIFIED

UDC: 621.311.001.2.003.1

USSR

KOKHOV, V. I., KRYUKOV, A. A., ~~MARKOVICH, I. M.~~ Moscow

"Optimization Models for Development of Electric Power Systems and System Mergers"

Moscow, Izv. AN SSSR: Energetika i Transport, No 3, May/Jun 72, pp 3-11

Abstract: The authors consider three types of optimization models of development of electric power systems: utilizing a previously developed model of the estimation type, a block optimization model, and a global model. Their advantages and disadvantages are compared. The results of the analysis show that an optimization model should be developed which utilizes the estimation model as a sub-block. The problem of selecting variants of the development of power plants in a power supply system is mathematically formulated, and an algorithm is devised for solving this problem, utilizing the method of branches and boundaries.

- END -

1/1

CSO: 1860-W

Power Systems

UDC 621.315.05:621.3.015

USSR

VENIKOV, V.A., Dr. of Technical Sciences; MARKOVICH, I.M., ROKOTYAN, S.S.,
CHERNYA, G.A., Engineer [Moscow]

"Choice Of A System Of Rated Voltages For The Power Pools In The United Power
Grid Of The USSR"

Elektrichestvo, No 7, July 1972, pp 1-4

Abstract: The problem is considered of the choice of voltages in electrical networks from an immediate and distant viewpoint. It is concluded that the best solution for a single power system for the European part of the USSR and a single power system for the USSR is the creation of a power pool with a single system of rated voltages. Technical and economic analysis and operational tests show that for USSR conditions the optimum system of rated voltages is 330-110-220-500-1150 kv. Introduction into the USSR at the end of 50 years, of a voltage of 330 kv did not give the expected technical and economic advantages. In the last 10-12 years, the intense increase of 330-kv nets in the grid system of the south and the failure of this voltage system to assure reliability of exploitation of a power energy interconnection with a length up to 1500 km lead to the introduction in the USSR of 750 kv voltage and the formation in the country of territories with two different systems of rated voltage. Henceforth, use of 330-kv voltage must be limited to the grid system of the south and northwest. A
1/2

USSR

VENIKOV, V.A., et al, Elektrichestvo, No 7, July 1972, pp 1-4

system of voltages of 220-500 kv, including a large part of the country, assures at present reliability and economical operation of a power system; henceforth, in the USSR the introduction of a subsequent system of a-c voltage of the 1150-kv class is necessary, which must span all the territory of the country. The problem of linking 1150-kv and 750-kv nets is subject to subsequent study, particularly because they also depend on the choice of the subsequent stage of voltages in the power systems of the country--members of the Council For Mutual Economic Aid in Western Europe. A combination of system-generating functions of the 1150-kv a-c lines with long-distance transfer electrotransmission of d-c is subject to study. 1 ill. 2 ref.

2/2

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USSR

UDC 621.311.001.1

MARKOVICH, I. M., ROKOTYAN, S. S.

"Optimization and Estimation Models for Selecting the Optimal Development of Electric Power Systems"

V sb. Optimiz. i upr. bol'shimi sistemami v energ. (Optimization and Control of Large Systems in Power Engineering -- collection of works), Irkutsk, 1970, pp 134-153 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Yel74)

Translation: A digital computer representing a mathematical valuation model of optimization of development of power systems is analyzed. This optimization makes it possible to obtain an economic estimate of the versions of development of the power system given by the designer with respect to the calculated expenditures: a) for construction and maintenance of the power system; b) for fuel; c) for the electric power network; d) for losses from interruptions in the electric power supply and insufficient quality of the power. The first component of the expenditures is calculated in the calculation unit. In the optimization mode unit of the first type, the distribution of the active power of the electric power systems is optimized. The effect of losses in the networks can be considered in it, load charts of
1/4

USSR

MARKOVICH, I. M., ROKOTYAN, S. S., Optimiz. i upr. bol'shimi sistemami v energ. (Optimization and Control of Large Systems in Power Engineering -- collection of works), Irkutsk, 1970, pp 134-153 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Yel74)

individual units are obtained, and there is the possibility of introducing mode restrictions (for example, with respect to power overcurrents, with respect to voltage level). In the mode unit of the second type, the energy distribution of the power system is optimized considering the form of the chart with respect to duration. The advantages of the unit of this type are simplicity of the algorithm and calculation speed. The disadvantages are the impossibility of considering the losses in the network, determination of the load chart of the power system units and selection of the mode restrictions. The network unit also is an optimization unit since in it the expenditures on construction and maintenance of the electric power networks are determined on the basis of selecting the optimal network scheme and optimal parameters of its elements. The reliability is considered indirectly by correcting the network scheme obtained in the network unit without considering the reliability factor. The difficulties of building the network unit are investigated. The essence of the model of the branches

2/4

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USSR

MARKOVICH, I. M., ROKOTYAN, S. S., Optimiz. i upr. bol'shimi sistemami v energ. (Optimization and Control of Large Systems in Power Engineering -- collection of works), Irkutsk, 1970, pp 134-153 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Yel74)

and boundaries recommended for finding the optimal cost of the network (a nonlinear problem) is explained. The interaction of the mode and network units is analyzed. A model of consideration of the dynamic nature of the problem in the network unit of the valuation model is investigated. On the basis of the discussed principles, in 1968, the ENIN [Power Engineering Institute] and Energoset'proyekt [All-Union State Planning, Surveying and Scientific Research Institute of Power Systems and Electric Power Networks] developed a valuation model used when working out the plan for development of USSR power engineering in 1990-2000. Another model contains a network unit which insures obtaining of a global minimum of expenditures, the mode unit selecting the optimal composition of the units and considering the restrictions with respect to overcurrents and the loss unit considering the probability characteristics of the discharge. These areas of creation of optimization models are considered: 1) use of the improved valuation model as one of the main elements of the optimization models; 2) creation

3/4

USSR

MARKOVICH, I. M., ROKOTYAN, S. S., Optimiz. i upr. bol'shimi sistemami v energ. (Optimization and Control of Large Systems in Power Engineering -- collection of works), Irkutsk, 1970, pp 134-153 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Yel74)

of the optimization model of the unit type with feedback between the units, and 3) creation of the optimization model of the global type on the basis of integral linear programming. The bibliography has 13 entries.

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USSR

MARKOVICH, I. V., MARKOVICH, Z. P.

"Formalized Selection of Characteristics for Differential Diagnosis"

Kibernetika i Diagnostika [Cybernetics and Diagnosis -- Collection of Works], Riga, No 5, Zinatne Press, 1972, pp 37-45 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V867 by the authors).

Translation: A method is suggested for determination of an effective set of diagnostic parameters in medicine on the basis of a graph model of the pathogenesis of diseases. The method is based on formalized transformations of the graph and estimation of graph elements.

1/1

172 040 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--HEAT GENERATION IN RUBBER SAMPLES UNDER CYCLIC STRESS -U-
AUTHOR--(02)--MARKOVICH, L.M., GORELIK, B.M.
COUNTRY OF INFO--USSR
SOURCE--KAUCH. REZINA 1970, 29(3)-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--NATURAL RUBBER, ELASTOMER, SHOCK ABSORBER, CYCLIC STRESS,
VISCOELASTICITY, HEAT CONDUCTIVITY, MATERIAL DEFORMATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0063 STEP NO--UR/0138/70/029/003/0035/0038
CIRC ACCESSION NO--AP0132358
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132358

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. HEAT GENERATION IN NATURAL RUBBER (I) ELASTOMERS METAL SHOCK ABSORBERS UNDER CYCLIC COMPRESSION WAS EVALUATED, TAKING INTO ACCOUNT THE HYSTERESIS LOSSES RELATED TO A SINUSOIDAL STRESS STRAIN DISTRIBUTION IN A VISCOELASTIC MATERIAL. THE DIFFERENTIAL EQUATION FOR HEAT COND. REQUIRED A CORRECTION FOR DAMPING OF DEFORMATION IN A SAMPLE WITH INTERNAL FRICTION. SEVERAL EQUATIONS WERE DERIVED FOR THE CALC. OF TEMP. IN A I METAL SHOCK ABSORBER. THE ANAL. STUDIES AGREED WITH EXPTL. RESULTS. FACILITY: LENINGRAD. FILIAL NAUCH.-ISSLED. INST. REZIN. PROM., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 911.3:616.9:576.895.771(47+57)

SHIPITSINA, N. K., ANUFRIYEVA, V. N., BANDIN, A. I., VINOGRADSKAYA, O. N.,
GORNOSTAYEVA, R. M., KUPRIYANOVA, Y. S., MARKOVICH, N. Ya., RASNITSYN, S. P.,
and TIMOFEYEVA, L. V.

"Study of the Biology of Blood-Sucking Diptera as Basis for Combating
Vectors of Infection and Blood-Sucking Insects in the Soviet Union"

V sb. Materialy Nauchn. konferentsii posvyashch. 50-letiyu In-ta Med.
parazitol. i tropich. Med. 1970 (Proceedings of the Scientific Conference
Devoted to the 50th Anniversary of the Institute of Medical Parasitology
and Tropical Medicine 1970 -- collection of works), Moscow, 1970, pp 48-49
(from RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.48)

[No abstract]

1/1

USSR

UDC: 620.193.27

MARKOVICH, B. A., and SUPRUN, L. A., Central Scientific Research Institute of the Maritime Fleet

"Corrosion Resistance and Kinetics of Failure of Carbon Steel in Running Sea Water"

Moscow, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 557-561

Abstract: A study was made of the mechanism of the effect of a stream on the corrosion rate of steel in the form of a rotating disk. The specific nature of diffusion to the surface of the flat disk makes it possible to simulate diffusion processes occurring in a turbulent flow on a disk functioning under laminar conditions. A curve in the original article demonstrates the effect of the speed of rotation on the corrosion rate of type-20 steel in various neutral solutions. Another figure illustrates the dependence of the corrosion rate of a steel disk and the limit current density on the square root of the speed of rotation in sea water. The corrosion rate of steel in NaCl solutions is about 1.5 times higher than that in synthetic sea water; this is explained by the presence in the latter of magnesium and calcium salts. The hydroxides of both these metals which are formed in the areas adjoining the cathodes inhibit the corrosion rate on the corroding surface. The corrosion rate of steel in

USSR

MARKOVICH, R. A., and SUPRUN, L. A., Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 557-561

sea water is considerably lower than the limit cathode current. To some extent this is related to additional diffusional difficulties caused by the corrosion films deposited during the tests on the surface of the steel. A decrease in the dissolution rate with an increase in rpm of the disk is noted.

2/2

USSR

3
MDC 621.316.825.4:678.76

PAUSHKIN, YA. M., PANCHENKOV, G. M., CHERNYKH, V. G., LUNIN, A. F.,
KAUSHANSKIY, D. A., DMITRIYEV, V. A., and MARKOVICH, V. B., Moscow
Institute of the Petrochemical and Gas Industry Inst. I. M. Gubkin,
Moscow, Ministry of Higher Education USSR

"Effect During the Process of Irradiation of Ionizing Radiation on
Polymers With Conjugated Bonds"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 835-837

Abstract: The effects of gamma-rays from ^{60}Co at a dosage rate of
1.2-1.3 Mrad/hr on the electrophysical properties of the organic
semiconductors polyacetonitrile (I), paracyanogen (II), polyphenyl-
cyanamide (III), polydiacetyl (IV), polybutylecyanamide (V), and
polybutylecyanate (VI), specifically on their electrical resistance,
were studied during the process of irradiation. For I, II, IV, and
VI with a low ohmic resistance that were prepared at 450-500 °C,
irradiation at doses $\leq 5 \times 10^9$ rad did not result in any changes
of resistance. Irradiation of V, which also had a low ohmic resist-
ance, produced a slow rise in resistance in the dose range of 0-110

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USSR

PAUSHKIN, YA. M., et al, Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 835-837

Mrad and an abrupt rise at 110-140 Mrad. In the case of VI with a high ohmic resistance, which was prepared at 350°, ionizing radiation in the dose range from 0 to 170-200 Mrad produced further polymerization and cross-linking, which were reflected in a decrease of the resistance, while doses > 200 Mrad decomposed the polymer. The results showed that irradiation at doses up to 5×10^9 rad of I, II, IV, and VI with a low ohmic resistance did not change the physico-chemical and electrophysical properties of these polymers - i.e., they are suitable for use in radioelectronic devices operating under conditions of exposure to ionizing radiation.

2/2

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1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ELECTROPHYSICAL PROPERTIES OF THERMISTORS BASED ON POLYMERS WITH
CONJUGATED DOUBLE BONDS -U-
AUTHOR--(04)--OGANESOV, S.S., MARKOVICH, V.B., PAUSHKIN, YA.M., LUNIN, A.F.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 330-3 (TECH PHYS)
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS
TOPIC TAGS--CONJUGATE BOND SYSTEM, CONJUGATED POLYMER, ORGANIC
SEMICONDUCTOR, ELECTRIC PROPERTY, NITRILE, CYANAMIDE, THERMISTOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0715 STEP NO--UR/0020/70/191/002/0330/0333
CIRC ACCESSION NO--AT0124385
UNCLASSIFIED

2/2 026
CIRC ACCESSION NO--AT0124385

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC. PROPERTIES AND RESISTOR
PARAMETERS OF SEVERAL ORG. SEMICONDUCTOR THERMISTORS. E.G.,
POLYMALONITRILE (I) OR POLYCYANAMIDE, WERE MARKEDLY DEPENDENT ON THE
PREPN. CONDITIONS AND TEMP. THE VOLTAGE CURRENT CHARACTERISTICS OF I
WERE PLOTTED. MOSK. INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA,
MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.77.016.2:669.14.018.8

BULAT, S. I., GINDIN, A. SH., MARKOVICH, V. I., and MEANDROV, L. V.

"Influence of Hot Rolling Mode on Structure of OKh17T Steel"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works],
No 77, Metallurgiya Press, 1970, pp 145-150

Translation: Various modes of heating and rolling of OKh17T steel are studied on a semicontinuous mill. Experiments are performed, refining the mechanism of structure formation of high-chromium steel during hot rolling. Conditions of production of fine-grain structure and high plastic properties are determined. 4 tables; 5 biblio. refs.

1/1

1/2 017

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--THE INFLUENCE OF SOME DEPRIMING SUBSTANCES ON THE INDUCED REFLEX
PYRAMIDAL RESPONSE -U-

AUTHOR--(02)-OSTROVSKAYA, R.U., MARKOVICH, V.V.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 5, PP 55-59

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NARCOTIC, REFLEX, CENTRAL NERVOUS SYSTEM STIMULANT, DRUG
EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0214

STEP NO--UR/0219/70/069/005/0055/0059

CIRC ACCESSION NO--AP0120912

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--160CT70
CIRC ACCESSION NO--AP0120912
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ACUTE EXPERIMENTS ON 30 CATS
THE AUTHORS INVESTIGATED THE INFLUENCE OF NARCOTICS (SODIUM THIO-PENTHAL
AND SODIUM OXYBUTYRATE), STIMULANTS (BEMEGRIDE AND CAFFEINE) AND
NEUROLEPTICS (CHLORPROMAZINE AND TRIPHENAZINE) ON THE RESPONSE OCCURRING
IN THE BULBAR PYRAMIDS IN ELECTRODERMAL STIMULATION. THE STUDIED
NARCOTICS REVEALED A CAPACITY TO SUPPRESS THE REFLEX PYRAMIDAL RESPONSE.
UPON ANALYSIS OF THIS EFFECT IT IS SHOWN THAT OUT OF THE WHOLE REFLEX
ARCH, PARTICIPATING IN THE REALIZATION OF THIS RESPONSE, THE GREATEST
SENSITIVITY TO NARCOTICS ELICITE INTRACORTICAL CONNECTIONS WHICH CARRY
OUT THE SWITCHING BETWEEN SENSORY AND MOTOR REGIONS OF THE CORTEX. THE
REFERRED TO EFFECT COULD BE ELIMINATED BY STIMULANTS. IT IS SHOWN THAT
NEUROLEPTICS INHIBIT NEITHER THE REFLEX PYRAMIDAL RESPONSE, NOR THE
INTRACORTICAL RESPONSE, OCCURRING IN THE MOTOR REGION IN STIMULATION OF
THE FIRST SOMATOSENSORY AREA. FACILITY: INSTITUTE OF
PHARMACOLOGY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

USSR

MARKOVICH, I. V., MARKOVICH, Z. P.

"Formalized Selection of Characteristics for Differential Diagnosis"

Kibernetika i Diagnostika [Cybernetics and Diagnosis -- Collection of Works], Riga, No 5, Zinatne Press, 1972, pp 37-45 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V867 by the authors).

Translation: A method is suggested for determination of an effective set of diagnostic parameters in medicine on the basis of a graph model of the pathogenesis of diseases. The method is based on formalized transformations of the graph and estimation of graph elements.

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USSR

UDC 51.155.001.57.691.3.06

MARKOVICH, Z. P.

"Experimental Estimation of Elements of a Topological Model of an Object"

Metody i Sredstva Tekhn. Kibernet. [Methods and Equipment in Engineering Cybernetics -- Collection of Works], No. 10, Riga 1970, pp 13-22 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V709 by V. Mikheyev).

Translation: A method is described for experimental estimation of elements in a topological model of a complex object (the points are parameters or phenomena, the lines are cause-effect relationships) according to the following qualitative factors: 1) accessibility of the parameter for direct measurement; 2) time expended in measurement; 3) cost of measurements; 4) objectivity (reliability) of results of measurement; 5) undesirability (danger) of the measurement procedure; 6) unpleasantness of measurement procedure (the last two in medical diagnosis). The estimate is to be made using the experience and knowledge of several specialists based on the method of expert estimates and rank correlation. The results are presented from an experimental evaluation of the elements of a topological model of the brake system of the ZIL-164 vehicle. Examples of values of estimates of parameters on the basis of the factors listed above in medical and technical diagnosis are presented in an appendix.

1/1

UDC: 51

USSR

MARKOVNIKOV, V. G., POSPELOV, D. A.

"Evaluating a Class of Problems Realized in a Control System"

V sb. Programm. metod upr. Vyp. 1 (Program Method of Control, No 1--collection of works), Moscow, Computing Center of the Academy of Sciences of the USSR, 1971, pp 26-45 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V466)

Translation: A method is proposed for breaking up problems solvable by a computer system into type classes in order that the computer system might satisfy requirements of uniform loading of all elements of the structure.

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THE INFLUENCE OF PRELIMINARY TRAINING TO ALTITUDE HYPOXIA ON THE
CARDIAC CONTRACTILE FUNCTION IN ACUTE OVERSTRAIN -U-
AUTHOR--MARKOVSKAYA, G.I.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 23-25
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOMEDICAL CHAMBER, HEART, PHYSIOLOGIC STRESS, HYPOXIA,
MEDICAL EXPERIMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/0700

STEP NO--UR/0219/70/049/006/0023/0025

CIRC ACCESSION NO--AP0131299

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131299

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MALE RATS WERE TRAINED FOR 40 DAYS IN A BAROCHAMBER AT AN "ALTITUDE" OF 6000 M. IN THESE ANIMALS, AS WELL AS IN RE-TRAINED, ACUTE OVERSTRAIN OF THE HEART WAS CREATED BY MEANS OF EXPERIMENTAL COARCTATION OF THE AORTA. TWO DAYS AFTER THE OPERATION THE INDICES OF THE FORCE OF MYOCARDIAL CONTRACTION WERE STUDIED. THESE INDICES, INTRAVENTRICULAR PRESSURE, INTENSITY OF FUNCTIONING OF STRUCTURES AFTER INDUCTION OF EXPERIMENTAL DISEASE. FACILITY: INSTITUTE OF NORMAL AND PATHOLOGICAL PHYSIOLOGY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EXPERIMENTAL PROPHYLAXIS OF ACUTE CARDIAC INCOMPETENCE BY
PRELIMINARY TRAINING OF ANIMALS TO HYPOXIA OF HIGH ALTITUDE -U-
AUTHOR--(05)-MEYERSON, F.Z., MAYZELIS, M.YA., MARKOVSKAYA, G.I., GOLUBEVA,
L.O., NOVIKOVA, N.A.
COUNTRY OF INFO--USSR
SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,
VOL 14, NR 2, PP 49-54
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART DISEASE, ALTITUDE CHAMBER, BIOMEDICAL CHAMBER,
VENTRICULAR HYPERTROPHY, MYOCARDIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0144

STEP NO--UR/0396/70/014/002/0049/0054

CIRC ACCESSION NO--AP0105230

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105230

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WISTAR RATS WERE TRAINED FOR 40 DAYS IN A BAROCHAMBER, 6 HOURS DAILY AT AN "ALTITUDE" OF SEVEN THOUSAND METERS. SUCH TRAINING LED TO ACTIVATION OF THE SYNTHESIS OF NUCLEIC ACIDS AND PROTEIN IN THE MYOCARDIUM OF THE LEFT, AND, PARTICULARLY, OF THE RIGHT CARDIAC VENTRICLE (WHICH SERVED AS THE BASIS OF HYPERTROPHY), AND TO INCREASE OF THE MAXIMAL POWER OF CONTRACTION OF THE VENTRICLES (OF THE LEFT, BY 18 PER CENT, AND OF THE RIGHT, BY 33 PER CENT). THIS TRAINING WAS CARRIED OUT FOR THE PURPOSE OF PREVENTION OF ACUTE CARDIAC INSUFFICIENCY PRODUCED BY OVERLOADING IN CORACTATION OF AORTA. PRELIMINARY TRAINING TO HIGH ALTITUDE HYPOXIA PROVED TO PREVENT OR TO REDUCE DISTURBANCES OF METABOLISM AND MYOCARDIAL FUNCTION WHICH USUALLY FOLLOWED INDUCTION OF AN EXPERIMENTAL DEFECT, AND CONSTITUTED THE BASIS OF CARDIAC INCOMPETENCE. FACILITY: LABORATORIYA EKSPERIMENTAL'NOY KARDIOLOGII INSTITUTA NORMAL'NOY I PATOLOGICHESKOY FIZIOLOGII AMN SSSR, MOSKVA.

UNCLASSIFIED

USSR

M UDC 616.12-008.46-092.9-008

MEYERSON, F. Z., MAYSELIS, M. YA., MARCOVSKAYA, G. I., GOLUBINA, L. G., and NOVIKOVA, N. A., Laboratory of Experimental Cardiology, Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR

"Experimental Prophylaxis of Acute Cardiac Inefficiency by Preliminary Conditioning of Animals to High-Altitude Hypoxia"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 2, 1970, pp 49-54

Abstract: A total of forty days of conditioning of Wistar rats to hypoxia (8 hours daily at a simulated altitude of 7000 m) intensified the synthesis of nucleic acids and protein in the myocardium of the left and right ventricles (especially the latter), and increased the maximum force of ventricular contractions. Cardiac inefficiency induced by coarctation of the aorta resulted in marked edema of the subcutaneous fatty tissues of the neck and chest in untrained rats, but did not have this effect in trained animals. Cardiac inefficiency also produced metabolic disturbances and impaired myocardial contractility in untrained animals. In the 1/2

USSR

MEYERSON, F. Z., et al., Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 2, 1970, pp 44-5.

trained animals, however, these changes were persistent or present only in a mild form. The reasons for the high degree of resistance to acute cardiac insufficiency created by preliminary conditioning to hypoxia are discussed.

2/2

Burn Studies

USSR

UDC 617-007.17-092.9-07:616.12-008.1-072.7

SHTYKHNO, Yu. M., and MARKOVSKAYA, G. I., Laboratory of General Pathophysiology and Experimental Therapy and Laboratory of Experimental Cardiology, Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow

"Effects of Thermal Trauma on the Contractile Function of the Rabbit Heart"

Moscow, *Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya*, No 3, May-Jun 73, pp 64-66

Abstract: The contractile function of the myocardium was studied on rabbits subjected to severe 2d and 3d-4th degree burns. At both burn degrees, the burn lesion extended over 25-30% of the body surface. Both under conditions of relative physiological rest and of maximum contraction of the heart produced by compression of the aorta, no significant changes in the contractile function were observed for 24 hrs, except that the maximum rate of the rise and fall of pressure in the left ventricle was considerably diminished vs. that of controls and of animals with less severe burns.

1/1

M

Physiology

USSR

UDC 612.163.3-08:612.273.2

MARKOVSKAYA, G. I., Laboratory of Experimental Cardiology, Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR

"The Effect of Preliminary Altitude Hypoxia Training on Myocardial Contractility After Acute Over Load"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 6, 1970, p 23-25

Abstract: Rats were trained 6 hours daily for 40 days in a pressure chamber at a simulated altitude of 6,000 m. Overload was induced in both the trained and untrained animals by coarctation of the abdominal aorta. Pressure in the left and right ventricles was determined two days after the operation both under conditions of relative physiological rest and after isometric contraction. Coarctation of the aorta was found to decrease the force of myocardial contraction in both groups of animals, but much less so in those conditioned to altitude hypoxia. Thus, training made the animals more resistant to acute over load of the heart caused by increased resistance to the ejection of blood.

1/1

USSR

MARKOVSKIY, A. V.

"Minimization of System of Boolean Functions in the Class of DNF"

Abstraktn. i Struktur. Teoriya Releyn. Ustroistv. [Abstract and Structural Theory of Relay Devices -- Collection of Works], Moscow, Nauka Press, 1972, pp 167-181 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V620 by the author).

Translation: Approximate methods of synthesis of the DNF of a system of undefined Boolean functions are described, based on an approach related to separation of obligatory parts of the DNF and the idea of directed search. Programs written in LYAPAS are presented for certain methods.

1/1

USSR

UDC. 577.4

MARKOVSKIY, A. V.

"Minimizing Systems of Boolean Functions in the Class of Disjunctive Normal Forms"

Moscow, Abstraktn. i struktur. teoriya releyn. ustroystv---sbornik (Abstract and Structural Theory of Relay Devices---collection of works), "Nauka", 1972, pp 167-181 (from RZh-Matematika, No 1, Jan 73, abstract No 1V620 by the author)

Translation: Approximation methods are described for synthesizing disjunctive normal forms in a system of indefinite Boolean functions. The procedures are based on an approach which involves isolating obligatory parts of the disjunctive normal forms, and on the idea of directed search. Programs in the LYAPAS language are given for some methods.

1/1

USSR

UDC: 577.4

MARKOVSKIY, A. V.

"Approximate Minimization of Systems of Weakly Defined Boolean Functions in the Class of Disjunctive Normal Forms"

Inform. materialy. Nauch. sovet po kompleks. probl. "Kibernetika." AN SSSR
(Informational Materials. Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), 1971, No 7(54), pp 115-116
(from RZh-Kibernetika, No 5, May 72, Abstract No 5V348)

[No abstract]

1/1

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USSR

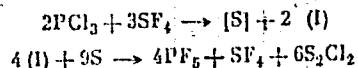
UDC 546.185

MARKOVSKIY, L. N., STUKALO, YE. A., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukraine SSR

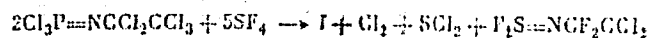
"The Reaction of Phosphorus Chlorides with Tetrafluorosulfur"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2581-2582

Abstract: The title reaction occurs in the following manner.



Product (I) can also be obtained by the reaction of SF_4 with PCl_3 . The reaction of phosphorus oxychloride with SF_4 in a 1:2 ratio results in the formation of SOF_2 and (I). The reaction of trichlorophosphazoperchloroethane reacts with SF_4 with the formation of (I) and N-substituted fluoros iminothionyles as follows



Physical properties are given for compound (I).
1/1

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1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--N,CHLOROPHOSPHAMIDES -U-
AUTHOR--(03)--MARKOVSKIY, L.N., PINCHUK, A.M., KOVALEVSKAYA, T.V.
CCOUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 543-5 M
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, ORGANIC SYNTHESIS, ORGANIC
PHOSPHORUS COMPOUND, AMIDE, CHEMICAL STABILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0876 STEP NO--UR/0079/70/040/003/0543/0545
CIRC ACCESSION NO--AP0124539
UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124539
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. CHLORINATION OF (SHOWN ON
MICROFICHE). THE N-ME MEMBERS COULD BE STORED INDEFINITELY AT
20DEGREES; N-BU MEMBERS DECOMP. IN PART DURING DISTN. AND DECOMP. TO A
CONSIDERABLE EXTENT WITHIN 5-6 DAYS. FACILITY: INST. ORG. KHIM.
KIEV, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--3000170
TITLE--N SUBSTITUTED DERIVATIVES OF IMINOTHIONYL CHLORIDE -U-
AUTHOR--(03)-MARKOVSKIY, L.N., SHOKOL, Z.I., LEVCHENKO, YE.S.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(3), 496-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--THIOL, CHLORINATED ORGANIC COMPOUND, AMIDE, CONDENSATION
REACTION, AMINE DERIVATIVE, BENZENE DERIVATIVE, BROMINATED ORGANIC
COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1675 STEP NO--UR/0366/70/006/003/0496/0499
CIRC ACCESSION NO--AP0112669
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112669

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE CONDENSATION OF AMINES, THEIR HCL SALTS, OR AMIDES WITH SCL SUB2 GAVE 45-80PERCENT RN: SCL SUB2 (R IS P CLC SUB6 H SUB4 CO, P BRC SUB6 H SUB4 CO, ETOCO, 2,NITRO,6,PYRIDYL, 3,5,DICHLORO,2,METHYL,6,PYRIDYL, ME SUB2 NSO SUB2, PIPERIDINO SULFONYL, MORPHOLINOSULFONYL, OF P BR SUB6 H SUB4). THE YIELDS DEPEND ON THE BASICITY AND SOLY. OF THE AMINES OR AMIDES.

UNCLASSIFIED

USSR

UDC 547.26'118

M
MARKOVSKIY, L. N., PINCHUK, A. M., and KOVALEVSKAYA, T. V., Institute
of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Addition of N,N-Dichlorophosphamides to Styrene"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1011-1014

Abstract: N,N-Dichloramides of dialkylphosphoric acids readily add to styrene contrary to Markovnikov's rule to form N-chloro-N-2-chloro-phenylethylamides of dialkylphosphoric acids (I). Reduction of the latter with an aqueous solution of sodium bisulfite or gaseous hydrogen chloride at 2-5° gives N-2-chloro-2-phenylethylamides of dialkylphosphoric acids. The latter and I split on the N-P bond under the action of gaseous hydrogen chloride at 50-60° to give 2-chloro-2-phenylethylamine chloride. N-2-Chloro-2-phenylethylamides of dialkylphosphoric acids react with an alcoholic solution of alkali to give 1-dialkoxyposphonyl-2-phenylethylenimines. The latter react with hydrogen chloride or chlorine to open the ethylenimine ring on the nitrogen-secondary carbon atom bond. The authors thank A. V. KIRSANOV for his advice and assistance.

1/1

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USSR

UDC 621.3.032.35

MARKOVSKIY, L. YA., TAUSHKANOVA, L. B., GLADKOVA, V. F., KONDRASHEV, YU. D.

"Interrelation between the Granulometric Composition of Zinc Sulfide-Cadmium Sulfide Luminophores and the Degree of Dispersion of the Original Zinc Sulfide-Cadmium Sulfide"

Leningrad, Russian, Zhurnal prikladnoi khimii, vol 46, No 7, July 73, pp 1430-1434

Abstract: The number of small particles in the luminophore ZnS-CdS (with Ag and NaCl) increased with increasing dispersion of both the ZnS and CdS, while the average grain size increased with decreasing specific volume of the sulfide powders. The ZnS affected the granulometric composition more than did the CdS. Electron micrographs of the 62% ZnS + 38% CdS product calcined at temperatures from 550 to 800°C show the increasing size of the grains with increasing calcination temperature.

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USSR

UDC 666:6:621.791.3:620.172.251.2

KOGAN, Yu. N. and MARKOVSKIY, V. N.

"Investigation of the Mechanical Strength of Joints of Ceramic Materials With Metals at Elevated Temperatures"

Moscow, Zavodskaya Laboratoriya, No 5, 1972, pp 596-598

Abstract: The present work is the first stage in a study of the thermomechanical properties of joints of the ceramic material 22KhS with metals, with respect to stretching within the temperature range from 20 to 950-1000°. A procedure has been developed for investigating the mechanical strength of joints of the ceramic material with metals at elevated temperatures. Special clamps were designed and produced for a machine of the PRV-302 type, intended for testing specimens of refractory materials for stretching and short-term creep in a vacuum or in an inert-gas medium. Results of determination of the tensile strength of joints of material 22KhS with metals at temperatures to 1000° are presented. 3 figures. 2 tables. 3 references.

1/1

2

USSR

UDC: 681.327

TERYAYEV, V. A., SHESTAKOV, I. B., PEREPLETCHIKOV, G. N., ~~MARKOVSKIY, V. N.~~
IVASHKIN, G. P., MAR'YANOVSKIY, M. M.

"Method of Manufacturing Thin-Film Magnetic Matrices"

USSR Authors' Certificate No 251713, Filed 2 April 1968, Published 10 February 1970 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, 1970, Abstract No 10B161P, by N. V.)

Translation: A method is suggested for manufacturing thin-film magnetic matrices differing from known methods in that in order to decrease the ohmic resistance of the control lines and retain the magnetic properties of the matrix, the conducting layers are produced by gluing down foil using organic varnishes (glues) as the matrices are heated in the presence of a magnetic field in the plane of the substrate. One illustration.

1/1

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USSR

UDC 620.17

GORBACH, S. S., MARKOVSKIY, V. YU., PAKHNEV, A. V., and SHAKOL'SKAYA, M. P.

"Influence of Various Factors Upon Photoelastic Coefficients During the Measurement of Stresses in Cubic Single-Crystals by the Polarization-Optical Method"

Tallin, VII Vses. Kong. po Polayarizatsionno-Optich. Metodu Isped. Napryazheniy. 4 -- Sbornik (Seventh All-Union Conference on the Polarization-Optical Method of Stress Research. 4 -- Collection of Works), 1971, pp 141-144 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V1628 by V. D. Kopytov)

Translation: A report is given on the results of an experimental investigation of the influence of the temperature, wavelength, and impurities upon the value of the photoelastic coefficients of alkaline-halide crystals of NaCl, KCl, KBr, KY and RbY. It turned out that the photoelastic coefficients increase with an increase of temperature. Only for NaCl crystals was such an effect not observed. Increasing the wavelength also first brings about an increase of the optical coefficient, and then, starting with certain wavelength values (on the order of 577 nanometers) it begins to decrease. Here the wavelength interval at which a sharp decrease of the optical coefficients begins, is shifted toward high temperature. Increasing the percent content of

1/2

1/2 049 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--WEAR ON CERTAIN COATINGS IN AN ARGON MEDIUM -U-

AUTHOR--MARKOVSKIY, YE.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (2), 118-120

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--WEAR MATERIAL, WEAR RESISTANCE, CERAMIC COATING, METAL
COATING, CHROMIUM NICKEL STEEL, MOLYBDENUM, BORIDE, CARBIDE, CHROMIUM
PLATING, NITRIDATION, ANTIFRICTION MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1827

STEP NO--UR/0369/70/006/002/0118/0120

CIRC ACCESSION NO--AP0129195

UNCLASSIFIED

2/2 049

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129195

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DRY FRICTION AND WEAR TESTS WERE CARRIED OUT AT 350DEGREESC IN A MEDIUM OF INERT GAS (AR) ON CR, NI STEEL SAMPLES WITH COATINGS OF MO, BORIDES AND CARBIDES, AND THE RESULTS WERE COMPARED WITH THOSE CORRESPONDING TO UNCOATED STEEL AND STEEL SUBJECTED TO CR PLATING WITH SUBSEQUENT NITRIDING. THE BEST ANTIFRICTION PROPERTIES WERE EXHIBITED BY THE CARBIDE AND BORIDE COATINGS, ALTHOUGH THE CR PLATED AND NITRIDED SURFACES WERE ALSO SATISFACTORY. THE MO COATING WAS INADEQUATE.

UNCLASSIFIED

USSR

UDC 519.3.110.74.62-50

KHARATISHVILI, G. L., MACHAIDZE, Z. A., MARKOZASHVILI, N. I., and TADUMADZE, T. A.

"Abstract Variational Theory and Its Applications to Optimization Problems With Time Lags"

Abstraktnaya Variatsionnaya Teoriya i Yeye Primeneniya k Optimal'nyim Zadacham s Zapazdyvaniyami (cf. English above), Tbilisi, Metsniyereba Publishing House, 1973, 112 pp, Annotation p 4, Introduction pp 5-6

Translation: Annotation -- The work proves the quasiconvexity of filters, which makes it possible to obtain from the necessary criticality condition the necessary optimality conditions in the form of the maximum principle for optimization problems containing time lags, not only in the phase coordinates but also in the controls. The optimization problem with time lags subject to mixed constraints on phase coordinates and controls is studied separately. Proof is given of the necessary optimality condition that permits, in particular, solution of bottleneck problems in which the time-lag factor is considered. Finally, an algorithm is given and a standard program described

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USSR

KHARATISHVILI, G. L., et al., Abstraktnaya Variatsionnaya Teoriya i Yeye
Primeneniya k Optimal'nyy Zadacham s Zapazdyvaniyami, Tbilisi, Metsniyereba
Publishing House, 1973, 112 pp

that makes possible calculation of quasilinear optimal time-lag systems.

Excerpt from Introduction -- Extremal problems in linear topological spaces are formulated as problems in the determination of critical filters of a given mapping. Therefore, the criterion for finding the critical filters of mappings yields the corresponding criterion for solving the given extremal problem. To formulate nontrivial criticality criteria it is necessary to apply certain conditions not only to the class of mappings under consideration but also to the class of unknown critical filters. However, these constraints must be broad enough to comprehend the fundamental variational and optimization problems. The mappings under consideration are assumed to be differentiable, and the unknown filters to be quasiconvex; the respective definitions are given in 1.1.

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USSR

KHARATISHVILI, G. L., et al., Abstraktnaya Variatsionnaya Teoriya i Yeye
Primeneniya k Optimal'nyy Zadacham s Zapazdyvaniyami, Tbilisi, Metsniyereba
Publishing House, 1973, 112 pp

1.2 establishes the quasiconvexity of the filters pertinent to optimization problems with time lags (see 2.1). The differentiable mapping corresponding to these problems is then constructed and the necessary optimality condition derived from the necessary criticality condition in the form of the maximum principle for optimization problems containing time lags, not only in the phase coordinates but also in the controls (see 2.2).

2.3 and 2.4 prove theorems on the differentiability and continuous dependence of the solutions to the differential equations on the right-hand sides that are used in the preceding paragraphs.

Section 3 studies optimization problems containing a time lag in the controls in the presence of mixed constraints on the phase coordinates and controls. Bottleneck problems in particular reduce to these if we consider a time lag in the controls that in real systems, as a rule, is different from

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USSR

KHARATISHVILI, G. L., et al., Abstraktnaya Variatsionnaya Teoriya i Yeye
Primeneniya k Optimal'nyy Zadacham s Zapazdyvaniyami, Tbilisi, Metsniyereba
Publishing House, 1973, 112 pp

zero and plays an important role (see R. BELLMAN, Dinamicheskoye Programirovaniye [Dynamic Programming], Foreign Literature Press, 1960 [12]). The principal result of the section is the necessary optimality condition, given in the form of a maximum principle, proof of which is effected by the local cross-section method suggested by V. G. BOITYANSKIY in Matematicheskiye Metody Optimal'nogo Upravleniya (Mathematical Methods of Optimal Control), Nauka Publishing House, 1969 [13]. The conclusion of the section gives an application of the maximum principle to bottleneck problems.

The concluding Section 4 is devoted to the method of numerical calculation of linear time-optimal systems containing time lags in both the controls and the phase coordinates. Substantiation of the computational algorithm is given, as well as a brief description of the standard program compiled on the basis thereof, which is used to calculate several test examples on a BESM-4 electronic computer. Results of the calculation are given in a table.

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1/2 040 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THE NEXT STEP TOWARDS THE ORBITAL STATIONS -U-
AUTHOR--MARKS, A. M
COUNTRY OF INFO--USSR
SOURCE--TECHNIKA LOTNICZA I ASTRONAUTYCZNA, 1970, VOL 25, NR 1 PP 1-4
DATE PUBLISHED-----70
SUBJECT AREAS--SPACE TECHNOLOGY
TOPIC TAGS--SPACE PROGRAM, INTERPLANETARY FLIGHT, MANNED SPACE FLIGHT,
MANNED ORBITAL LABORATORY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1986/1308 STEP NO--PO/0102/70/025/001/0001/0004
CIRC ACCESSION NO--AP0103190
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 040

CIRC ACCESSION NO--AP0103190

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THIS PAPER ALL SOVIET SPACE
EXPERIMENTS THAT COULD BE CONSIDERED AS THE COMPONENTS OF THE PROGRAMME
INTENDING TO PLACE ON THE EARTH ORBIT A MANNED STATION ARE REMEMBERED.
THE GROUP FLIGHT OF THE MANNED SPACECRAFT SOJUZ 6, 7 AND 8 IS PRESENTED
AS THE FURTHER STEP TOWARDS THE LARGE ORBITAL OBJECTS SCHEDULED ALSO FOR
MANNED INTERPLANETARY FLIGHTS.

0123

UNCLASSIFIED

Analysis and Testing

USSR

UDC 548.0:539.27

GEGUZIN, Ya. Ye., MARKUS, A. M., and GOROKHOV, M. V., Khar'kov State University

"On Protonography 'by Transparency' of Single-Crystal Films"

Moscow, Kristallografiya, Vol 17, No 4, 1972, pp 783-787

Abstract: Features of a new method for analyzing the structure of crystals and their defects are discussed. The method "pass-through" is based on the study of the shadow and the channeling effects of protons passing through the crystalline lattice. Experimental data are reported which must be taken into account for obtaining "geometrical" information. The latter provides a clarification of features of "pass-through" protonography. Under optimum conditions, the energy of the primary beam W_0 and the thickness of the film d are correlated in the form $d = \alpha W_0 / \varphi$, where φ = magnitude of specific losses of protons in the film substance and α is a dimensionless factor $\alpha \leq 1$. Experiments in which single-crystal films 6000-8000 Å thick were exposed to a collimated beam of protons are discussed. Five figures, seven bibliographic references.

1/1

USSR

UDC: 517.9

MARKUS, A. S. and MEREUTSA, I. V.

"Full Set of Roots of the Operator Equation Corresponding to a Polynomial Operator Family"

Moscow, Izvestiya Akademii Nauk SSSR -- Seriya Matematicheskaya, Vol 37, No 5, 1973, pp 1108-1131

Abstract: This paper concerns the quadratic operator family $L(\lambda) = \lambda^2 I + \lambda B + C$ studied in an earlier paper (M. G. Kreyn, et al., O nekotorykh matematicheskikh printsipakh lineynoy teorii demfirovannykh kolebaniy kontinuumov -- Some Mathematical Principles of the Linear Theory of Damped Continuum Oscillations -- published in the Tr. mezhdunarodnogo simpoziuma po primereniyu teorii funktsiy kompleksnogo peremennogo v mekhanike sploshnoy sredy (Transactions of the International Symposium on the Application of the Theory of Functions of a Complex Variable to the Mechanics of a Solid Medium) "Nauka," Moscow, vol. 2, 1965, pp 283-322). Under some limitations on the coefficients of the family $L(\lambda)$, there exist roots of the equation $L(Z) = 0$, where $L(Z) = Z^n + A_{n-1}Z^{n-1} + \dots + A_1Z + A_0$, having certain characteristics. Unlike the method of the earlier paper, the present one does not introduce determinations of the full set of roots. It considers the problem of the mutual placement of the

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USSR

MARKUS, A. S. and MEREUTSA, I. V., Izvestiya Akademii Nauk SSSR -- Seriya Matem Matematicheskaya, vol 37, No 5, 1973, pp 1108-1131

spectra of $L(\lambda)$ and the spectra of the roots z_1, z_2, \dots, z_n of $L(z)=0$. The function of the Vandermonde operator in investigating the connection between the multiple completeness of the characteristic and joint vectors of $L(\lambda)$ on the one hand, and the completeness of the system of root vectors of the operators z_1, z_2, \dots, z_n on the other, is explained. Some examples are given. The authors express their gratitude to I. A. Fel'dman for his comments.

2/2

USSR

UDC: 513.88:513.88+517.948

MARKUS, A. S., SIGAL, Ye. I.

"On the Multiplicity of the Characteristic Number of an Analytic Operator Function"

V sb. Mat. issledcvaniya (Mathematical Research--collection of works), T. 5, vyp. 3, Kishinev, Academy of Sciences of the Moldavian SSR, 1970, pp 129-147 (from RZh-Matematika, No 5, May 71, Abstract No 5B790)

Translation: Some formulas are derived for the multiplicity of the characteristic number of an analytic operator function. In particular, the following generalization of the classical theorem of a logarithmic residue is proved: Let Γ be a simple closed rectifiable curve bounding the region G , while $A(\lambda)$ is an operator function which is analytic in $G \cup \Gamma$. If the operator $A(\lambda)$ is reversible for all $\lambda \in \Gamma$ and Fredholmian for all $\lambda \in \Gamma$, then the sum of the multiplicities of the characteristic numbers of $A(\lambda)$ lying in G is

$$\frac{1}{2\pi i} \oint_{\Gamma} \text{sp} \int A'(\lambda) A^{-1}(\lambda) d\lambda.$$

By means of these results, simple proofs are found for the main properties of multiplicity of the characteristic number which were established by V. M. Yeri (RZh-Mat. 1970, 4B688) and Ye. I. Sigal (RZh-Mat. 1970, 10B588). Authors' abstract. 1/1

- 24 -

Acc. Nr:

AP0046177

Abstracting Service: 5/70
GEOPHYSICAL ABST.

Ref. Code:

MR0068

m

92021v Improvement in the quality of regenerated sodium hydroxide solutions. ~~Markus, G. A.; Kiyatsova, T. P.~~ (USSR). *Koks Khim.* 1970, (2), 31-3 (Russ). The NaOH used in the PhOH extn. is recovered. After treatment with CO₂ and removal of PhOH by steam distn., the remaining water is treated with Ca(OH)₂ to restore NaOH, but on recycling the NaOH soln. several by-product salts of the coking process accumulate. To lower the salt content of the NaOH soln., it is advisable to improve the efficiency of the NH₃ scrubbers, the main source of impurities, to remove residual PhOH by a 2-step extn. which diminishes the salt content of the NaOH soln. to be recycled, and by cooling, pptn., and filtration. A. P. Mueller

1/1

gk.

18

REEL/FRAME
19781254

USSR

UDC 621.793.3:669.245.781

KOVALEV, V. V., MARKUS, M. M., and PETROV, YU. N.

"Phase and Structural Conversions in Boron-Containing Nickel Films"

Bul. Akad. Shtiintse RSSMold, Izv. AN MOLD SSR. Ser. fizich. i mat. n.
(Bulletin of the Academy of Sciences Moldavia SSR. Physical Technical and
Mathematical Science Series), No 3, 1972, pp 53-61 (from Referativnyy Zhurnal
-- Khimiya, No 8(II), 1973, Abstract No 8L318)

Translation: A study was performed on the structure of chemically precipitated Ni-B films, both of the original composition and after different thermal treatments. Electronographic methods of analysis indicated that prior to the thermal treatment, the films have a highly dispersed GTSK (expansion unknown) for nickel in a mixture amorphous boron. As a result of the annealing different borides are formed; however, their composition is essentially related to the concentration of B in the film. X-ray studies show the formation of compounds Ni_3B (at 3100°), Ni_2B , and a previously unknown compound having the presumed composition $Ni_1.5B_2$ (at 4100°). It was observed that the compound $Ni_1.5B_2$ is thermally unstable and decomposes into the phases Ni_2B and Ni_3B . It was shown that the thermal treatment of Ni-B films in air accompanied by oxidation reduction processes may lead to a reduction in the content of the borides in the film, to the separation of free Ni, and to the growth of grains of nickel which in turn causes a rapid reduction the microhardness. 1/1

Genetics

USSR

UDC 575.172.1/576.858.13/576.858.23

MARKUSHIN, S. G., Moscow Scientific Research Institute of Viral Preparations

"The Phenomenon of Fragmentation of Genetic Material in Viruses"

Moscow, Uspekhi Sovremennoy Biologii, No 2(5), 1971, pp 163-182

Abstract: In biological systems, fragmentation is the commonest principle governing the organization of genetic material. In multicellular organisms, the genetic material occurs in the nuclei in the form of huge subunits, replicons bearing genes in definite combinations. The discontinuous synthesis of DNA, on the other hand, appears to be an essential stage in the replication of genetic material in systems differing in complexity of biological organization. Both phenomena are found with fair frequency in viruses. Depending on the group to which a virus belongs, fragmentation of the genome exhibits a number of variations that are manifested chiefly by the degree of autonomy of the individual fragments. The article reviews the literature (mainly non-Soviet) on fragmentation of genetic material in RNA-containing viruses of vertebrates, reovirus, oncogenic RNA-containing viruses of animals, plant viruses, insect viruses, RNA-containing bacteriophages, and in DNA-containing bacteriophages during the infectious cycle.

1/2

USSR

MARKUSHIN, S. G., Uspekhi Sovremennoy Biologii, No 2(5), 1971, pp 163-182

Whereas in influenza virus, reovirus, and oncogenic RNA-containing viruses of animals all the fragments are included in a single protein membrane, in plant viruses each fragment is included in a separate protein membrane.

2/2

- 4 -

USSR

UDC 576.858.73.098.396.07

MARKUSHIN, S. G., and SOLOV'YEV, G. Ya., Moscow Scientific Research Institute
of Virus Preparations

"A Study of the Structural Proteins of Newcastle Disease Virus by Electrophoresis in Polyacrylamide Gel"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 394-397

Abstract: Newcastle disease virus (the epizootic Kuz'minka strain) was grown in a medium of chick embryo fibroblasts and labeled with C^{14} -tagged amino acids of hydrolyzed chlorella. After purification and dissolution of the virus, the samples were subjected electrophoresis in polyacrylamide gel columns for 6-hour long at 1.5 v/cm, 5 ma. The gels were then removed from the glass columns, stained, frozen, and cut into sections; the sections were dissolved in hydrogen peroxide and placed on a 3 mm chromatographic paper; and the radioactivity was measured with the USS-1 counter (Maizel's method). The analysis revealed that the capsid stot of Newcastle disease virus is composed of three main polypeptides with molecular weights of 90,000, 60,000, and 45,000 dalton and of a group of polypeptides with electrophoretic mobility and a molecular weight of about 6,000 dalton.

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1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--FATE OF INFLUENZA VIRUS RNA IN CELLS TREATED WITH ULTRAVIOLET RAYS
-U-
AUTHOR--(04)--GENDON, YU.Z., GINSBURG, V.P., SOLOVEV, G., MARKUSHIN, S.G.
COUNTRY OF INFO--USSR
SOURCE--J. GEN. VIROL. 1970, 6(2), 249-55 (ENG)
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INFLUENZA VIRUS, RNA, FOWL PLAGUE VIRUS, TISSUE CULTURE, UV
RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/0593

STEP NO--UR/0000/70/006/002/0249/0255

CIRC ACCESSION NO--AP0116091

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 022
CIRC ACCESSION NO--AP0116091
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE FATE OF RNA PRIME14 C OF FOWL
PLAGUE VIRUS WAS STUDIES IN UNIRRADIATED AND UV IRRADIATED CULTURES OF
CHICK EMBRYO FIBROBLASTS. UV IRRADN. OF CELLS DID NOT PREVENT VIRUS
PENETRATION INTO THE CELL AND DEPROTEINIZATION OF VIRUS RNA AND ITS
PENETRATION INTO THE CELL NUCLEUS. HOWEVER, RNA PENETRATING INTO
NUCLEI OF IRRADIATED CELLS UNDERWENT PRACTICALLY COMPLETE DEGRADATION.
RNASE ACTIVITY INCREASED 2 TO 3 FOLD IN THE NUCLEAR FRACTION OF
IRRADIATED CELLS. IT IS SUGGESTED THAT THIS RNASE MAY PARTICIPATE IN
THE DEGRADATION OF VIRUS RNA IN NUCLEI OF IRRADIATED CELLS.
FACILITY: MOSCOW RES. INST. VIRUS PREP., MOSCOW, USSR.

UNCLASSIFIED

1/2 U21 UNCLASSIFIED
TITLE--RESEARCH DEVELOPMENT PRODUCTION -U-

PROCESSING DATE--11SEP70

AUTHOR--MARKUSIK, N.

COUNTRY OF INFO--USSR

SOURCE--RABOCHAYA GAZETA, JUNE 24, 1970, P 3, COLS 3-6

DATE PUBLISHED--24JUN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LUBRICATING OIL, LUBRICANT ADDITIVE, ORGANOLITHIUM COMPOUND,
GREASE, ASPHALT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/1696

STEP NO--UR/9015/70/DDO/700/0003/0003

CIRC ACCESSION NO--AN0108072
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UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0108072
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ARTICLE CITES THE ALL UNION SCIENTIFIC RESEARCH AND DESIGN PLANNING INSTITUTE AT NOVYYE BELICHI, A SUBURB OF KIEV. THE INSTITUTE, DIRECTED BY VLADIMIR TIKHONOVICH SKLYAR, IS SEARCHING FOR NEW LUBRICANTS AND ADDITIVES, ANALYZES UKRAINIAN OILS, RESEARCHES SURFACE ACTIVE AND MACHINING LUBRICANTS, AND ROAD SURFACING AND INSULATING BITUMENS. THE INSTITUTE ALSO DOES EXPLORATORY RESEARCH FOR THE OIL INDUSTRY. THE LABORATORY OF COMPLEX LUBRICANTS IS HEADED BY YURIY LUKICH ISHCHUK, DEPUTY DIRECTOR FOR RESEARCH. THE LABORATORY OF PROCESSES AND APPARATI IS HEADED BY BORIS GRIGOR, YEVICH FROYSHTETTER. PETR YEMEL, YANOVICH NEDBAYLYUK IS REFERRED TO AS CHIEF SPECIALIST IN STATIC TESTS. THE LONG RANGE RESEARCH PROGRAM OF THE INSTITUTE CONTAINS SUCH PROJECTS AS THE DEVELOPMENT OF "EVERLASTING LUBRICANTS" AND LUBRICANTS FOR FAR NORTH REGIONS ALSO ADDITIVES THAT WOULD ELIMINATE CHANGING OF MOTOR OIL, AND MACHINING LUBRICANTS. THE INSTITUTE HAS DEVELOPED 8 LITHIUM BASE LUBRICANTS. A PHOTOGRAPH OF L. ISHCHUK AND SENIOR SCIENCE ASSOCIATE A. MASKAYEV IS GIVEN.

UNCLASSIFIED

172 021 UNCLASSIFIED
TITLE--RESEARCH DEVELOPMENT PRODUCTION -U-

PROCESSING DATE--11SEP70

AUTHOR--MARKUSIK, N. M

COUNTRY OF INFO--USSR

SOURCE--RABOCHAYA GAZETA, JUNE 24, 1970, P. 3, COLS 3-6

DATE PUBLISHED--24JUN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LUBRICATING OIL, LUBRICANT ADDITIVE, ORGANOLITHIUM COMPOUND,
GREASE, ASPHALT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/1696

STEP NO--UR/9015/70/000/000/0003/0003

CIRC ACCESSION NO--AN0108072

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 021

CIRC ACCESSION NO--ANG108072

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE CITES THE ALL UNION SCIENTIFIC RESEARCH AND DESIGN PLANNING INSTITUTE AT NOVYYE BELICHI, A SUBURB OF KIEV. THE INSTITUTE, DIRECTED BY VLADIMIR TIKHONOVICH SKLYAR, IS SEARCHING FOR NEW LUBRICANTS AND ADDITIVES, ANALYZES UKRAINIAN OILS, RESEARCHES SURFACE ACTIVE AND MACHINING LUBRICANTS, AND ROAD SURFACING AND INSULATING BITUMENS. THE INSTITUTE ALSO DOES EXPLORATORY RESEARCH FOR THE OIL INDUSTRY. THE LABORATORY OF COMPLEX LUBRICANTS IS HEADED BY YURIY LUKICH ISHCHUK, DEPUTY DIRECTOR FOR RESEARCH. THE LABORATORY OF PROCESSES AND APPARATI IS HEADED BY BORIS GRIGOR, YEVICH FROYSHTETTER. PETR YEMEL, YANOVICH NEGBAYLYUK IS REFERRED TO AS CHIEF SPECIALIST IN STATIC TESTS. THE LONG RANGE RESEARCH PROGRAM OF THE INSTITUTE CONTAINS SUCH PROJECTS AS THE DEVELOPMENT OF "EVERLASTING LUBRICANTS" AND LUBRICANTS FOR FAR NORTH REGIONS ALSO ADDITIVES THAT WOULD ELIMINATE CHANGING OF MOTOR OIL, AND MACHINING LUBRICANTS. THE INSTITUTE HAS DEVELOPED 8 LITHIUM BASE LUBRICANTS. A PHOTOGRAPH OF L. ISHCHUK AND SENIOR SCIENCE ASSOCIATE A. MASKAYEV IS GIVEN.

UNCLASSIFIED

Oncology

UDC 616.00.6

USSR

MARKUZE, I. I., AMBARTSUMYAN, R. G., and PIRUZYAN, L. A., Institute of Chemical Physics, Academy of Sciences USSR

"The Variation in K, Na, and Ca Ion Concentrations in the Ascitic Fluid of Animals With Tumors Following the Action of a Constant Magnetic Field"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 2, Mar/Apr 72, pp 268-272

Abstract: White mice were inoculated with tumor cells from the ascitic form of Sarcoma 37 and then, 1-13 days after inoculation, were exposed to a constant magnetic field of $5 \cdot 10^3$ oersteds for periods of 3-5 days. At various time intervals after cessation of exposure to the field, the mice were examined for changes in the concentrations of potassium, sodium, and calcium ions in the extracellular ascitic fluid. Statistically reliable increases of up to 50% were observed in the concentration of potassium ions. Given the same duration of exposure to the magnetic field, greater increases occurred during the early stages of development of the tumor and when measurements were taken immediately following exposure to the field. In fact, by the 6th day after cessation of exposure an increase in potassium ions could no longer be observed. The concentrations of sodium and calcium ions did not vary.

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1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EQUILIBRIUM OF CONDENSED PHASES WITH VAPOR IN WHICH ASSOCIATION AND
AGGREGATION PROCESSES ARE TAKING PLACE. VI. CHANGE IN THE OVER ALL
AUTHOR--HARKUZIN, N.P.
COUNTRY OF INFO--USSR M
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 673-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CALCULATION, EQUILIBRIUM CONSTANT, GAS STATE, CONDENSED PHASE
REACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3002/1064 STEP NO--UR/0076/70/044/003/0673/0675
CIRC ACCESSION NO--AP0128491
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128491

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DIFFERENTIAL EQUATION DESCRIBING THE CHANGE IN THE COMPN. OF THE VAPOR ABOVE THE 2,COMPONENT LIQ. WAS DERIVED. THE POSSIBILITY OF CALCH. THE EQUIL. CONSTS. OF CHEM. PROCESSES TAKING PLACE IN THE VAPOR PHASE IS NOTED. FACILITY:
LENINGRAD. GDS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED